Cisco Catalyst 3560-C and 2960-C Series Compact Switches

The Cisco® Catalyst® 3560-C and 2960-C Series Compact Switches are small form-factor Fast Ethernet and Gigabit Ethernet switches designed for deployments outside the wiring closet. Enterprise and commercial customers can deliver advanced security services, unified communications, wireless, IP video cameras, and other applications for the office workspace, micro branch office, classroom, cruise ship, and other wiring-constrained environments.

The Cisco Catalyst 3560-C and 2960-C series compact switches are shown in Figure 1.

Cisco Catalyst 3560-C and 2960-C Series highlights:

- PoE pass-through. An innovative feature and industry first for passing power from the compact switch to end devices.
- Media Access Control Security (MACsec) hardware-based encryption.
- Power over Ethernet Plus (PoE+) up to 30 W per port.
- USB and Console port for file backup, distribution, and simplified operations.
- Fanless for silent operation.
- Enhanced limited lifetime hardware warranty (E-LLW) with next business day (NBD) advance hardware replacement and 90 day access to Cisco Technical Assistance Center (TAC) support.

Figure 1. Cisco Catalyst 3560-C and 2960-C Series Compact Switches

Cisco Borderless Networks and Access Switching

Borderless Networks, a Cisco next-generation architecture, deliver the new workspace experience, connecting anyone, anywhere, using any device, to any resource - securely, reliably, transparently. The Cisco Borderless Networks architecture addresses primary IT and business challenges to help create a truly borderless experience by bringing interactions closer to the employee and customer. Innovations in switching help organizations deliver ease of operation, green efficiency, security, and performance to accelerate the way IT delivers and scales those services on the network. Figure 2 depicts the Cisco Borderless Network benefits.

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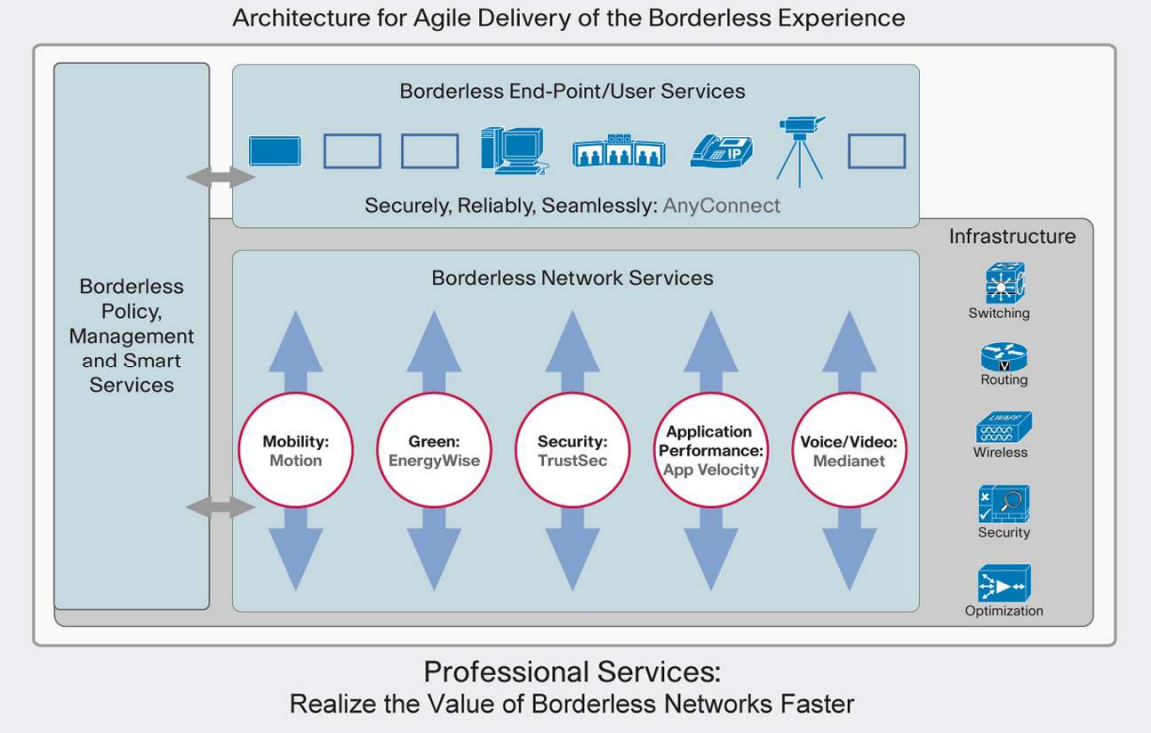
Figure 2. Cisco Borderless Network Benefits



Cisco Borderless Networks Primary Capabilities

- Sustainability: PoE pass-through to provide PoE to downlink ports using PoE or PoE+ switches in the wiring closet; Cisco EnergyWise to measure, report, and reduce energy usage across the entire organization
- Operational excellence: Cisco Catalyst Smart Operations
- Secure business: Intelligent features at the network edge for sophisticated access control lists (ACLs) and identity services with a wide range of authentication methods, data encryption, and Network Admission Control (NAC)-based technology
- Workspace experience: Network control and bandwidth optimization for granular rate limiting, ACLs, and multicast video services

Switch Configurations

Table 1 shows the configuration information for the Cisco Catalyst 3560-C and 2960-C series compact products.

Table 1. Configurations of Cisco Catalyst 3560-C and 2960-C series compact Switches

Switch Model	Uplinks	Description
WS-C2960CPD-8TT-L	2 10/100/1000 PoE input ports	Cisco Catalyst 2960-C PSE Switch 8 FE, 2 x 1G, PoE+ LAN Base
WS-C2960CPD-8PT-L	2 10/100/1000 PoE input ports	Cisco Catalyst 2960-C PD PSE Switch 8 FE PoE, 2 x 1G, PoE+ LAN Base
WS-C2960CG-8TC-L	2 dual-purpose port (10/100/1000 or SFP)	Cisco Catalyst 2960-C Switch 8 GE, 2 x Dual Purpose Uplink, LAN Base
WS-C3560CG-8TC-S	2 dual-purpose port (10/100/1000 or SFP)	Cisco Catalyst 3560-C Switch 8 GE, 2 x Dual Purpose Uplink, IP Base
WS-C3560CG-8PC-S	2 dual-purpose port (10/100/1000 or SFP)	Cisco Catalyst 3560-C Switch 8 GE PoE, 2 x Dual Purpose, IP Base

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Cisco Catalyst 3560-C and 2960-C Compact Series Software

The Cisco Catalyst 3560-C Series Compact Switches come IP Base and the Cisco Catalyst 2960-C Series Compact Switches come with LAN Base, neither switch can be upgraded.

The LAN Base feature set offers enhanced intelligent services that includes comprehensive Layer 2 features.

The IP Base feature set provides baseline enterprise services in addition to all LAN Base features. IP Base also includes the support for routed access, MACSec, and OSPF.

Cisco Networked Sustainability: Good for Business, Better for Environment

Together, Cisco EnergyWise technology and Cisco Catalyst Compact switches enable greenhouse gas (GhG) emissions reduction, increased energy cost savings, and sustainable business behavior.

- **PoE pass-through** gives the ability to power PoE end devices through drawing PoE from the wiring closet. **The Cisco Catalyst 2960CPD-8PT-L** has eight 10/100 ports with two PoE or PoE+ input ports to allow it to be powered by another switch. This switch does not need a power supply and receives power over the uplink from an upstream PoE device, providing deployment flexibility and availability. It is ideal for wiring and space-constraint applications.
- **Cisco EnergyWise** is an innovative architecture, added to the Cisco Catalyst 3560-C and 2960-C series compact switches, that enables the measurement of power consumption in the network infrastructure and network-attached devices. EnergyWise encompasses a highly intelligent network-based approach to communicate messages that measure and control energy between network devices and endpoints. The network discovers Cisco EnergyWise-manageable devices, monitors their power consumption, and takes action based on business rules to reduce power consumption.
- **Efficient switch operation:** Cisco Catalyst 3560-C and 2960-C series compact switches use hardware components created by Cisco providing optimum power saving, low-power operations for industry best-in-class power management, and power consumption capabilities. The Cisco Catalyst 3560-C ports are capable of reduced power modes so that ports not in use can move into a lower power utilization state.
- **IEEE 802.3at or PoE+** available on the Cisco Catalyst 3560-C is the latest in PoE technology, allowing capable devices to be powered with power output up to 30 watts per port. Table 2 outlines switch models and power capacity for the Cisco Catalyst 3560-C and 2960-C series compact switches.

Table 2. Switch PoE and PoE+ Power Capacity

Switch Model	Powering Options	Available POE Power(W)
WS-C2960CPD-8PT-L	1 P0E Uplink	0
WS-C2960CPD-8PT-L	2 PoE Uplinks	7
WS-C2960CPD-8PT-L	1 PoE+ Uplinks	7
WS-C2960CPD-8PT-L	1 POE+ and 1 POE Uplinks	15.4
WS-C2960CPD-8PT-L	2 PoE+ Uplinks	22.4
WS-C2960CPD-8PT-L	Auxiliary Input	22.4
WS-C3560CG-8PC	Internal Power Supply	124

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Cisco Operational Excellence: Reducing Operating Costs

Cisco Catalyst 3560-C and 2960-C series compact switches make deployment easy: reduce switch installation, configuration, troubleshooting time, and operational costs.

- **Cisco Catalyst Smart Operations** is a set of features to enhance operational excellence
  - **Cisco Smart Install** is a transparent plug-and-play technology to configure the Cisco IOS® Software image and switch configuration without user intervention. Smart Install utilizes dynamic IP address allocation and the assistance of other switches to facilitate installation, providing transparent network plug and play.
  - **Cisco Auto SmartPorts** provides automatic configuration as devices connect to the switch port, allowing autodetection and plug and play of the device onto the network. It configures the port with predefined configurations encapsulating years of Cisco networking expertise, including security, IP telephony, availability, QoS, and manageability features with minimal effort and expertise.
  - **Cisco Smart Configuration** provides a single point of management for a group of switches and in addition adds the ability to archive and back up configuration files to a file server or switch. A group of switches can be upgraded or configured from a single point in the network.
  - **USB file storage and console** for file backup, distribution, and simplified operations allow the user to back up and boot from a USB device and allow for Mini USB console access along with traditional RS-232 console connectivity.
  - **Cisco Smart Troubleshooting** is an extensive array of debug diagnostic commands and system health checks within the switch including Generic Online Diagnostics (GOLD).
- **Easy-to-Use Deployment and Control Features**
  - **Automatic QoS (AutoQoS)** simplifies QoS configuration in voice over IP (VoIP) networks by issuing interface and global switch commands to detect Cisco IP phones, classify traffic, and help enable egress queue configuration.
  - **Dynamic Host Configuration Protocol (DHCP)** autoconfiguration of multiple switches through a boot server eases switch deployment.
  - **Auto-Negotiation** on all ports automatically selects half- or full-duplex transmission mode to optimize bandwidth.
  - **Dynamic Trunking Protocol (DTP)** facilitates dynamic trunk configuration across all switch ports.
  - **Port Aggregation Protocol (PAgP)** automates the creation of Cisco Fast EtherChannel® groups or Gigabit EtherChannel groups to link to another switch, router, or server.
  - **Link Aggregation Control Protocol (LACP)** allows the creation of Ethernet channeling with devices that conform to IEEE 802.3ad. This feature is similar to Cisco EtherChannel technology and PAgP.
  - **Automatic Media-Dependent Interface Crossover (MDIX)** automatically adjusts transmit and receive pairs if an incorrect cable type (crossover or straight-through) is installed.
  - **Unidirectional Link Detection Protocol (UDLD)** and Aggressive UDLD allow unidirectional links caused by incorrect fiber-optic wiring or port faults to be detected and disabled on fiber-optic interfaces.
  - **Switching Database Manager (SDM)** templates for access, routing, and VLAN deployment allow the administrator to easily maximize memory allocation to the desired features based on deployment-specific requirements.
  - **Local Proxy Address Resolution Protocol (ARP)** works in conjunction with Private VLAN Edge to minimize broadcasts and maximize available bandwidth.

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- **Internet Group Management Protocol (IGMP)** Snooping for IPv4 and IPv6 MLD v1 and v2 Snooping provide fast client joins and leaves of multicast streams and limit bandwidth-intensive video traffic to only the requestors.
- **Multicast VLAN Registration (MVR)** continuously sends multicast streams in a multicast VLAN while isolating the streams from subscriber VLANs for bandwidth and security reasons.
- **Per-port Broadcast, Multicast, and Unicast Storm Control** prevents faulty end stations from degrading overall systems performance.
- **Voice VLAN** simplifies telephony installations by keeping voice traffic on a separate VLAN for easier administration and troubleshooting.
- **Cisco VLAN Trunking Protocol (VTP)** supports dynamic VLANs and dynamic trunk configuration across all switches.
- **Remote Switch Port Analyzer (RSPAN)** allows administrators to remotely monitor ports in a Layer 2 switch network from any other switch in the same network.
- For enhanced traffic management, monitoring, and analysis, the **Embedded Remote Monitoring (RMON)** software agent supports four RMON groups (history, statistics, alarms, and events).
- **Layer 2 Traceroute** eases troubleshooting by identifying the physical path that a packet takes from source to destination.
- **Trivial File Transfer Protocol (TFTP)** reduces the cost of administering software upgrades by downloading from a centralized location.
- **Network Timing Protocol (NTP)** provides an accurate and consistent timestamp to all intranet switches.

Advanced, Intelligent Network Management Tools

The Cisco Catalyst 3560-C and 2960-C Series Compact Switches offer both the traditional Cisco CLI for detailed configuration and Cisco Network Assistant software, a PC-based tool for quick configuration based on preset templates. In addition, CiscoWorks LAN Management Solution (LMS) supports the Cisco Catalyst 3560-C and 2960-C Series Compact Switches for networkwide management.

CiscoWorks LAN Management Solution

CiscoWorks LAN Management Solution (LMS) is a comprehensive network lifecycle management solution. It provides an extensive library of easy-to-use features to automate the initial and day-to-day management of your Cisco network infrastructure. CiscoWorks LMS uniquely uses Cisco hardware and software platform knowledge and operational experience into a powerful set of workflow-driven configuration, monitoring, troubleshooting, reporting, and administrative tools. Including:

- Support for new Cisco hardware platforms the day they ship
- Support for new technologies and services from initial deployment to day-to-day administration and management, such as EnergyWise, Identity, Cisco Auto Smartports, Cisco Smart Install, and much more
- Configuration management tools built from Cisco experience and Cisco Validated Design recommendations
- Monitoring and troubleshooting capabilities that incorporates Cisco hardware best practices and diagnostics features
- Automation in managing hardware inventories, security vulnerabilities (PSIRTS), and platform end-of-life and support cycles
- For detailed information about CiscoWorks LMS, go to http://www.cisco.com/en/US/products/sw/cscowork/ps2425/index.html.

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Enhanced Work Space Experience for End Users

Borderless Security

The Cisco Catalyst Compact Series Switches provide superior Layer 2 threat defense capabilities for mitigating man-in-the-middle attacks (such as MAC, IP, and ARP spoofing). TrustSec, a primary element of Borderless Security Architecture, helps enterprise customers secure their networks, data and resources with policy-based access control, identity and role-aware networking, pervasive integrity, and confidentiality.

The borderless security is enabled by the following feature sets in the Cisco Catalyst 3560-C and 2960-C Compact Series Switches:

- Threat defense
- Cisco TrustSec
- Other advanced security features

Threat Defense

Cisco Integrated Security Features is an industry-leading solution available on Cisco Catalyst Switches that proactively protects your critical network infrastructure. Delivering powerful, easy-to-use tools to effectively prevent the most common and potentially damaging Layer 2 security threats, Cisco Integrated Security Features provides robust security throughout the network. Cisco Integrated Security Features include Port Security, DHCP Snooping, Dynamic ARP Inspection, and IP Source guard.

- **Port Security** secures the access to an access or trunk port based on MAC address. It limits the number of learned MAC addresses to deny MAC address-flooding.
- **DHCP Snooping** prevents malicious users from spoofing a DHCP server and sending out bogus addresses. This feature is used by other primary security features to prevent a number of other attacks such as ARP poisoning.
- **Dynamic ARP Inspection (DAI)** helps ensure user integrity by preventing malicious users from exploiting the insecure nature of the ARP protocol (3560-C Only).
- **IP source guard** prevents a malicious user from spoofing or taking over another user's IP address by creating a binding table between the client's IP and MAC address, port, and VLAN (3560-C Only).

Cisco TrustSec

TrustSec secures access to the network, enforces security policies, and delivers standard based security solutions such as 802.1X enabling secure collaboration and policy compliance. TrustSec capabilities reflect Cisco thought leadership, innovations, and commitment to customer success. These new capabilities include:

- **IEEE 802.1AE MACsec** with prestandard 802.1X-REV Key management: industry's first fixed switches with prestandard 802.1X-Rev key management. Available on Cisco Catalyst 3560-C Series Switches, MACsec provides Layer 2, line rate Ethernet data confidentiality and integrity on host facing ports, protecting against man-in-the-middle attacks (snooping, tampering, and replay).
- **Flexible authentication** that supports multiple authentication mechanisms including 802.1X, MAC Authentication Bypass and web authentication using a single, consistent configuration.
- **Open mode** that creates a user friendly environment for 802.1X operations.
- **Integration of device profiling technology and guest access** handling with Cisco switching to significantly improve security while reducing deployment and operational challenges.
- **RADIUS Change of Authorization and Downloadable Calls** for comprehensive policy management capabilities.

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- **802.1X Supplicant with Network Edge Access Transport (NEAT)** enables extended secure access where compact switches in the conference rooms have the same level of security as switches inside the locked wiring closet.

Other Advanced Security Features

Other Advanced Security features include but are not limited to:

- **Private VLAN Edge** provides security and isolation between switch ports, which helps ensure that users cannot snoop on other users' traffic.
- **Multidomain Authentication** allows an IP phone and a PC to authenticate on the same switch port while placing them on appropriate voice and data VLAN.
- **Port-Based ACLs** for Layer 2 interfaces allow security policies to be applied on individual switch ports.
- **Secure Shell (SSH) Protocol, Kerberos, and Simple Network Management Protocol Version 3 (SNMPv3)** provide network security by encrypting administrator traffic during Telnet and SNMP sessions. SSH Protocol, Kerberos, and the cryptographic version of SNMPv3 require a special cryptographic software image because of U.S. export restrictions.
- Bidirectional data support on the **Switched Port Analyzer (SPAN)** port allows Cisco Intrusion Detection System (IDS) to take action when an intruder is detected.
- **TACACS+ and RADIUS Authentication** facilitates centralized control of the switch and restricts unauthorized users from altering the configuration.
- **MAC Address Notification** allows administrators to be notified of users added to or removed from the network.
- **Multilevel Security on Console Access** prevents unauthorized users from altering the switch configuration.
- **Bridge Protocol Data Unit (BPDU) Guard** shuts down Spanning Tree PortFast-enabled interfaces when BPDUs are received to avoid accidental topology loops.
- **Spanning Tree Root Guard (STRG)** prevents edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes.
- **IGMP Filtering** provides multicast authentication by filtering out nonsubscribers and limits the number of concurrent multicast streams available per port.
- **Dynamic VLAN Assignment** is supported through implementation of VLAN Membership Policy Server client capability to provide flexibility in assigning ports to VLANs. Dynamic VLAN facilitates the fast assignment of IP addresses.

Table 3 shows switch hardware information.

Table 3. Cisco Catalyst 3560-C and 2960-C Series Compact Switch Hardware

Description	Specification		
Performance		**Cisco Catalyst 3560-C**	**Cisco Catalyst 2960-C**
	Forwarding Bandwidth	10 Gbps	10 Gbps
	Flash memory	64 MB	64 MB
	Memory DRAM	128 MB	128 MB
	Max VLANs	255	255
	VLAN IDs	4K	4K
	Maximum transmission unit (MTU)	Up to 9000 bytes	Up to 9000 bytes
	Jumbo frames	9018 bytes	9018 bytes
	Forwarding rate 64 Byte Packet Cisco Catalyst 3560-C		

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Description	Specification			
	WS-C3560CG-8TC-S	13.2 mpps		
	WS-C3560CG-8PC-S	13.2 mpps		
	Forwarding rate 64 Byte Packet Cisco Catalyst 2960-C			
	WS-C2960CG-8TC-L	13.2 mpps		
	WS-C2960CPD-8PT-L	3.8 mpps		
	WS-C2960CPD-8TT-L	3.8 mpps		
	Resource Cisco Catalyst 3560-C, 2960-C	**Default**	**Routing**	
	Unicast MAC addresses	8000	4000	
	IGMP groups and multicast routes	250	250	
	Unicast routes	750	875	
	Directly connected hosts	250	750	
	Indirect routes	750	875	
	QoS classification ACEs	125	375	
	Security ACEs	375	375	
	VLANs	255	255	
Connectors and cabling	**Cisco Catalyst 3560-C and 2960-C with SFP-based ports:** • 10BASE-T ports: RJ-45 connectors, 2-pair Category 3, 4, or 5 unshielded twisted-pair (UTP) cabling • 100BASE-TX ports: RJ-45 connectors, 2-pair Category 5 UTP cabling • 1000BASE-T ports: RJ-45 connectors, 4-pair Category 5 UTP cabling • 1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Category 5 UTP cabling • 1000BASE-SX -LX/LH, -ZX, -BX, -T*, -FX*, and CWDM SFP-based ports: LC fiber connectors (single/multimode fiber) • 100BASE-LX, -BX, -FX: SFP-based ports: LC fiber connectors (single/multimode fiber) **GLC-T and GLC-GE-100FX are not supported* For the complete list of SFP's supported please see: http://www.cisco.com/en/US/docs/interfaces_modules/transceiver_modules/compatibility/matrix/OL_6981.html			
Power connectors	• Customers can provide power to a switch only by using the internal power supply (2960CPD-8TT-L and 2960CPD-8PT-L do not require a power supply). The connector is located at the back of the switch. The internal power supply is an autoranging unit. • The internal power supply supports input voltages between 100 and 240VAC. • Use the supplied AC power cord to connect the AC power connector to an AC power outlet. **Note:** The Cisco Catalyst 2960CPD-8TT-L and 2960CPD-8TT-L has an option for an external power adapter if desired.			
Indicators	• Per-port status: Link integrity, disabled, activity, speed, full-duplex • System status: System, RPS, link status, link duplex, link speed			
Dimensions (H x W x D)	**Cisco Catalyst 2960-C**	**Inches**	**Centimeters**	
	WS-C2960CPD-8TT-L	1.75x10.6x6.8	44.4x269x172	
	WS-C2960CPD-8PT-L	1.75x10.6x6.8	44.4x269x172	
	WS-C2960CG-8TC-L	1.75x10.6x8.4	44.4x269x213	
	Cisco Catalyst 3560-C	**Inches**	**Centimeters**	
	WS-C3560CG-8TC-S	1.75x10.6x8.4	44.4x269x213	
	WS-C3560CG-8PC-S	1.75x10.6x9.4	44.4x269x238	
Weight	**Cisco Catalyst 2960-C**	**Pounds**	**Kilograms**	
	WS-C2960CPD-8TT-L	2.4	1.08	
	WS-C2960CPD-8PT-L	2.4	1.08	
	WS-C2960CG-8TC-L	3.0	1.35	
	Cisco Catalyst 3560-C	**Pounds**	**Kilograms**	
	WS-C3560CG-8TC-S	3.0	1.35	
	WS-C3560CG-8PC-S	4.25	1.92	
Environmental ranges		**Cisco Catalyst 3560-C**	**Cisco Catalyst 2960-C**	
	Operating* temperature up to 5000 ft (1524 m)	-5℃ to + 40℃	+23℉ to + 104℉	-5℃ to +40℃ +23℉ to +104℉

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Description	Specification				
	Operating* temperature up to 10,000 ft (3048 m)	-5℃ to +40℃	+23℉ to +104℉	-5℃ to +40℃	+23℉ t o +104℉
	Storage temperature up to 15,000 ft (4572 m)	-25℃ to +70℃	-13℉ to +158℉	-25℃ to +70℃	-13℉ to +158℉
	Operating altitude	Up to 3048 m	Up to 10,000 ft	Up to 3048 m	Up to 10,000 ft
	Storage altitude	Up to 4000 m	Up to 15,000 ft	Up to 4000 m	Up to 15,000 ft
	Operating relative humidity	5% to 95% noncondensing		5% to 95% noncondensing	
	Storage relative humidity	5% to 95% noncondensing		5% to 95% noncondensing	
	* Minimum ambient temperature for cold start is 0℃ (+ 32℉).				
Acoustic noise	ISO 7779 and ISO 9296: Bystander positions operating to an ambient temperature of 25℃				
	Model	**Sound pressure LpA (Typical)**	**Model**	**Sound pressure LpA (Typical)**	
	Cisco Catalyst 3560-C	0dB (fanless)	Cisco Catalyst 2960-C	0dB (fanless)	
Mean time between failure (MTBF)	**Cisco Catalyst 3560-C**	**MTBF**	**Cisco Catalyst 2960-C**	**MTBF**	
	3560CG-8PC-S	355,830	2960CPD-8PT-L	346,590	
	3560CG-8TC-S	488,549	2960CPD-8TT-L	471,888	
			2960CG-8TC-L	542,482	

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Table 4 shows switch power specifications.

Table 4. Power Specifications for Cisco Catalyst 3560-C and 2960-C Series Compact Switch

Description	Specification							
Measured 100% throughput power consumption	**Cisco Catalyst 3560-C**	**Switch Power Consumption Watts**			**Cisco Catalyst 2960-C**	**Switch Power Consumption Watts**		
	3560CG-8PC-S	23.9W			2960CG-8TC-L	17.6W		
	3560CG-8TC-S	18.4W			2960CPD-8PT-L	Single Uplink = 12W[1] Dual Uplink = 15W[1]		
					2960CPD-8TT-L	Single Uplink = 12W[1] Dual Uplink = 15W[1]		
Measured 5% throughput power consumption	**Cisco Catalyst 3560-C**	**Switch Power Consumption Watts**			**Cisco Catalyst 2960-C**	**Switch Power Consumption Watts**		
	3560CG-8PC-S	23.9W			2960CG-8TC-L	18W		
	3560CG-8TC-S	18.4W			2960CPD-8PT-L	Single Uplink = 12W[1] Dual Uplink = 15W[1]		
					2960CPD-8TT-L	Single Uplink = 12W[1] Dual Uplink = 15W[1]		
Measured 100% throughput power consumption (with maximum possible PoE loads)	**Cisco Catalyst 3560-C**	**Switch Power Consumption Watts**			**Cisco Catalyst 2960-C**	**Switch Power Consumption Watts**		
	3560CG-8PC-S	158W			2960CPD-8TT-L	43W		
AC/DC input voltage and current	**Cisco Catalyst 3560-C**				**Cisco Catalyst 2960-C**			
		I/P Voltage	I/P Current			I/P voltage	I/P Current	
	3560CG-8PC-S	100-240 VAC	1.7-0.9A		2960CG-8TC-L	100-240 VAC	0.3-0.15A	
	3560CG-8TC-S	100-240 VAC	0.3-0.15A		2960CPD-8PT-L	100-240 VAC	.01-.6A	
					2960CPD-8TT-L	100-240 VAC	.01-.6A	
Power rating	**Cisco Catalyst 3560-C**				**Cisco Catalyst 2960-C**			
		Watts	KVA	BTU		Watts	KVA	BTU
	3560CG-8PC-S	158	0.2	539	2960CG-8TC-L	17.6	0.02	60
	3560CG-8TC-S	18.4	0.02	63	2960CPD-8PT-L	51	.05	174
					2960CPD-8TT-L	51	.05	174
	Power measurement are best and worst case. Best Case is 1 PoE Connection. Worst case is 2 PoE+ connections.							
PoE and PoE+	• Maximum power supplied per Port for PoE+ is 30 W • Maximum power supplied per port for PoE: 15.4 W							

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Table 5 shows switch management and standards support.

Table 5. Management and Standards Support for Cisco Catalyst 3560-C and 2960-C Series Compact Switch

Description	Specification	
Management	• BRIDGE-MIB • CISCO-CABLE-DIAG-MIB • CISCO-CDP-MIB • CISCO-CLUSTER-MIB • CISCO-CONFIG-COPY-MIB • CISCO-CONFIG-MAN-MIB • CISCO-DHCP-SNOOPING-MIB • CISCO-ENTITY-VENDORTYPE-OID-MIB • CISCO-ENVMON-MIB • CISCO-ERR-DISABLE-MIB • CISCO-FLASH-MIB • CISCO-FTP-CLIENT-MIB • CISCO-IGMP-FILTER-MIB • CISCO-IMAGE-MIB • CISCO-IP-STAT-MIB • CISCO-LAG-MIB • CISCO-MAC-NOTIFICATION-MIB • CISCO-MEMORY-POOL-MIB • CISCO-PAGP-MIB • CISCO-PING-MIB • CISCO-POE-EXTENSIONS-MIB • CISCO-PORT-QOS-MIB • CISCO-PORT-SECURITY-MIB • CISCO-PORT-STORM-CONTROL-MIB • CISCO-PRODUCTS-MIB • CISCO-PROCESS-MIB • CISCO-RTTMON-MIB • CISCO-SMI-MIB • CISCO-STP-EXTENSIONS-MIB • CISCO-SYSLOG-MIB	• CISCO-TC-MIB • CISCO-TCP-MIB • CISCO-UDLDP-MIB • CISCO-VLAN-IFTABLE • RELATIONSHIP-MIB • CISCO-VLAN-MEMBERSHIP-MIB • CISCO-VTP-MIB • ENTITY-MIB • ETHERLIKE-MIB • IEEE8021-PAE-MIB • IEEE8023-LAG-MIB • IF-MIB • INET-ADDRESS-MIB • OLD-CISCO-CHASSIS-MIB • OLD-CISCO-FLASH-MIB • OLD-CISCO-INTERFACES-MIB • OLD-CISCO-IP-MIB • OLD-CISCO-SYS-MIB • OLD-CISCO-TCP-MIB • OLD-CISCO-TS-MIB • RFC1213-MIB • RMON-MIB • RMON2-MIB • SNMP-FRAMEWORK-MIB • SNMP-MPD-MIB • SNMP-NOTIFICATION-MIB • SNMP-TARGET-MIB • SNMPv2-MIB • TCP-MIB • UDP-MIB • ePM MIB
Standards	• IEEE 802.1D Spanning Tree Protocol • IEEE 802.1p CoS Prioritization • IEEE 802.1Q VLAN • IEEE 802.1s • IEEE 802.1w • IEEE 802.1x • IEEE 802.1AB (LLDP) • IEEE 802.3ad • IEEE 802.3af • IEEE 802.3ah (100BASE-X single/multimode fiber only) • IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports • IEEE 802.3 10BASE-T specification • IEEE 802.3u 100BASE-TX specification • IEEE 802.3ab 1000BASE-T specification • IEEE 802.3z 1000BASE-X specification	• 100BASE-BX (SFP) • 100BASE-FX (SFP) • 100BASE-LX (SFP) • 1000BASE-BX (SFP) • 1000BASE-SX (SFP) • 1000BASE-LX/LH (SFP) • 1000BASE-ZX (SFP) • 1000BASE-CWDM SFP 1470 nm • 1000BASE-CWDM SFP 1490 nm • 1000BASE-CWDM SFP 1510 nm • 1000BASE-CWDM SFP 1530 nm • 1000BASE-CWDM SFP 1550 nm • 1000BASE-CWDM SFP 1570 nm • 1000BASE-CWDM SFP 1590 nm • 1000BASE-CWDM SFP 1610 nm • RMON I and II standards • SNMPv1, SNMPv2c, and SNMPv3

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Description	Specification	
RFC compliance	• RFC 768: UDP • RFC 783: TFTP • RFC 791: IP • RFC 792: ICMP • RFC 793: TCP • RFC 826: ARP • RFC 854: Telnet • RFC 951: Bootstrap Protocol • RFC 1542: BOOTP Extensions • RFC 959: FTP • RFC 1058: RIP Routing • RFC 1112: IP Multicast and IGMP • RFC 1157: SNMPv1 • RFC 1163: BGP Routing • RFC 1166: IP Addresses • RFC 1253: OSPF Routing • RFC 1256: ICMP Router Discovery • RFC 1267: BGP Routing • RFC 1305: NTP • RFC 1492: TACACS+ • RFC 1493: Bridge MIB • RFC 1542: Bootstrap Protocol • RFC 1583: OSPFv2 • RFC 1643: Ethernet Interface MIB • RFC 1723: RIPv2 Routing • RFC 1757: RMON	• RFC 1812: IP Routing • RFC 1901: SNMPv2C • RFC 1902-1907: SNMPv2 • RFC 1981: MTU Path Discovery IPv6 • FRC 2068: HTTP • RFC 2080: RIP for IPv6 • RFC 2131: DHCP • RFC 2138: RADIUS • RFC 2233: IF MIB • RFC 2236: IP Multicast • RFC 2328: OSPFv2 • RFC 2362: PIM Sparse Mode • RFC 2273-2275: SNMPv3 • RFC 2373: IPv6 Aggregatable Addrs • RFC 2453: RIPv2 Routing • RFC 2460: IPv6 protocol • RFC 2461: IPv6 Neighbor Discovery • RFC 2462: IPv6 Autoconfiguration • RFC 2463: ICMP IPv6 • RFC 2474: DiffServ Precedence • RFC 2597: Assured Forwarding • RFC 2598: Expedited Forwarding • RFC 2571: SNMP Management • RFC 2740: OSPF for IPv6 • RFC 3046: DHCP Relay Agent Information Option • RFC 3101, 1587: NSSAs • RFC 3376: IGMPv3 • RFC 3580: 802.1x RADIUS • RFC 4271, 1771: BGP Routing

Table 6 shows switch safety and compliance information.

Table 6. Safety and Compliance

Description	Specification
Safety standards	• UL 60950-1 • CAN/CSA 22.2 No. 60950-1 • EN 60950-1 • IEC 60950-1 • CE Marking • GB 4943 • IEC 60825
Electromagnetic emissions certifications	• FCC Part 15, CFR 47, Class A, North America • EN 55022 (CISPR22) and EN 55024 (CISPR24), CE marking, European Union • AS/NZS, Class A, CISPR22:2004 or EN55022, Australia and New Zealand • VCCI Class A, V-3/2007.04, Japan KCC (formerly MIC, GB17625.1-1998) Class A, KN24/KN22, Korea • ANATEL, Brazil • CCC, China • GOST, Russia
Environmental	Reduction of Hazardous Substances (ROHS) 6
Telco	Common Language Equipment Identifier (CLEI) code

Safety Compliance and Product Approval Status

For further information on safety and compliance documentation, visit the Product Approval Status tool at http://tools.cisco.com/cse/prdapp/jsp/externalsearch.do?action=externalsearch&page=EXTERNAL_SEARCH.

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Cisco Enhanced Limited Lifetime Hardware Warranty

Cisco Catalyst 2960-C and 3560-C Series Switches come with an enhanced limited lifetime hardware warranty (E-LLW) that includes 90 days of Cisco Technical Assistance Center (TAC) support and next-business-day hardware replacement.

Your formal warranty statement, including the warranty applicable to Cisco software, appears in the Cisco information packet that accompanies your Cisco product. We encourage you to review carefully the warranty statement shipped with your specific product before use. Cisco reserves the right to refund the purchase price as its exclusive warranty remedy. For additional information on warranty terms, visit http://www.cisco.com/go/warranty.

Adding a Cisco technical services contract to your device coverage provides access to the Cisco TAC beyond the 90-day period allowed by the E-LLW. It also can provide a variety of hardware replacement options to meet critical business needs, as well as updates for licensed premium IOS software, and registered access to the extensive Cisco.com knowledge base and support tools.

Footnotes:

[1]. Cisco operating system updates include the following: maintenance releases, minor updates, and major updates within the licensed feature set.
[2]. Advance hardware replacement is available in various service-level combinations. For example, 8x5xNBD indicates that shipment will be initiated during the standard 8-hour business day, 5 days a week (the generally accepted business days within the relevant region), with next business day (NBD) delivery. Where NBD is not available, same day ship is provided. Restrictions apply; please review the appropriate service descriptions for details.

Table 7. Enhanced Limited Lifetime Hardware Warranty

	Cisco Enhanced Limited Lifetime Hardware Warranty
Device covered	Applies to Cisco Catalyst 2960-C and 3560-C Series compact switches
Warranty duration	As long as the original end user continues to own or use the product, provided that and power supply warranty is limited to 5 years.
EoL policy	In the event of discontinuance of product manufacture, Cisco warranty support is limited to 5 years from the announcement of discontinuance.
Hardware replacement	Cisco or its service center will use commercially reasonable efforts to ship a replacement for next business day delivery, where available. Otherwise, a replacement will be shipped within 10 working days after receipt of the RMA request. Actual delivery times might vary depending on customer location.
Effective date	Hardware warranty commences from the date of shipment to customer (and in case of resale by a Cisco reseller, not more than 90 days after original shipment by Cisco).
TAC support	Cisco will provide during business hours, 8 hours per day, 5 days per week basic configuration, diagnosis, and troubleshooting of device-level problems for up to a 90-day period from the date of shipment of the originally purchased Cisco Catalyst 2960 and 3560 product. This support does not include solution or network-level support beyond the specific device under consideration.
Cisco.com access	Warranty allows guest access only to Cisco.com.

Software Policy for Cisco Catalyst 3560-C and 2960-C Series Compact Switches

Customers with Cisco Catalyst LAN Base and IP Base software feature sets will be provided with maintenance updates and bug fixes designed to maintain the compliance of the software with published specifications, release notes, and industry standards compliance as long as the original end user continues to own or use the product or up to one year from the end-of-sale date for this product, whichever occurs earlier. Customers with licenses for our premium software images require a service support contract such as Cisco SMARTnet® Service to download updates.

This policy supersedes any previous warranty or software statement and is subject to change without notice.

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Cisco and Partner Services for Next-Generation Cisco Catalyst Fixed Switches

Enable the innovative, secure, intelligent edge in the Borderless Network Architecture using personalized services from Cisco and our partners. Through a discovery process that begins with understanding your business objectives, we help you integrate the next-generation Cisco Catalyst fixed switches into your architecture and incorporate network services onto that platform. Sharing knowledge and leading practices, we support your success every step of the way as you deploy, absorb, manage, and scale new technology. Choose from a flexible suite of support services designed to meet your business needs and help you maintain high-quality network performance while controlling operational costs. (See Table 8.)

Table 8. Technical Services Available for Cisco Catalyst 3560-C and 2960-C Series Compact Switches

Technical Services
Cisco SMARTnet Service • Around-the-clock, global access to the Cisco Technical Assistance Center (TAC) • Unrestricted access to the extensive Cisco.com knowledge base and tools • Next-business-day, 8x5x4, 24x7x4, and 24x7x2 advance hardware replacement and onsite parts replacement and installation available • Ongoing operating system software updates within the licensed feature set • Proactive diagnostics and real-time alerts on Smart Call Home enabled devices
Cisco Smart Foundation Service • Next business day advance hardware replacement as available • Business hours access to SMB TAC (access levels vary by region) • Access to Cisco.com SMB knowledge base • Online technical resources through Smart Foundation Portal • Operating system software bug fixes and patches
Cisco Focused Technical Support Services • 3 levels of premium, high-touch services are available: • Cisco High-Touch Operations Management Service • Cisco High-Touch Technical Support Service • Cisco High-Touch Engineering Service • Valid Cisco SMARTnet or SP Base contracts on all network equipment are required.

Ordering Information

Tables 9 and 10 give ordering information for the Cisco Catalyst 3560-C and 2960-C Series Compact Switches and accessories.

To place an order, visit the Cisco Ordering homepage at http://www.cisco.com/en/US/ordering/or13/or8/order_customer_help_how_to_order_listing.html.

Table 9. Ordering Information for Cisco Catalyst 3560-C and 2960-C Series Compact Switches

Product Name (Part Number)	Description
WS-C2960CPD-8TT-L	Cisco Catalyst 2960-C PSE Switch 8 FE, 2 x 1G, PoE+ LAN Base
WS-C2960CPD-8PT-L	Cisco Catalyst 2960-C PD PSE Switch 8 FE PoE, 2 x 1G, PoE+ LAN Base
WS-C2960CG-8TC-L	Cisco Catalyst 2960-C Switch 8 GE, 2 x Dual Purpose Uplink, LAN Base
WS-C3560CG-8TC-S	Cisco Catalyst 3560-C Switch 8 GE, 2 x Dual Purpose Uplink, IP Base
WS-C3560CG-8PC-S	Cisco Catalyst 3560-C Switch 8 GE PoE, 2 x Dual Purpose, IP Base

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Table 10. Ordering Information for Cisco Catalyst 3560-C and 2960-C Series Compact Switch Accessories

Part Number	Description
CMP-CBLE-GRD=*	Cable guard for the 3560-C and 2960-C Compact switches
CMP-MGNT-TRAY =	MAGNET AND MOUNTING TRAY FOR 3560-C AND 2960-C
PWR-ADPT=	Power Adapter for the 3560-C and 2960-C Compact switches
PWR-CLP=	Power Clip for the 3560-C and 2960-C Compact switches

* Available after FCS

For more information about Cisco products, contact:

- United States and Canada: (toll free) 800 553-NETS (6387)
- Europe: 32 2 778 4242
- Australia: 612 9935 4107
- Other: 408 526-7209
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